

4.0 NATURAL AND CULTURAL VALUES

4.1 Introduction

The area in and around Marble Range and Edge Hills Parks has long been recognized by local residents and visitors as an outstanding natural area. These parks contain unique natural physiographic features including: unusual limestone bedrock and calcareous soil conditions; plant species adapted to the calcareous conditions; limestone cave and vent structures; a significant elevation range accompanying vegetation ecosystems; significant wildlife habitats and populations; undisturbed landscapes.

This section provides a brief description of the primary natural and cultural attributes of the parks, and sets out resource management objectives and strategies to protect natural features and processes.

4.2 Vegetation Management and Use

Vegetation in Marble Range and Edge Hills Parks has been shaped significantly by two major elements: (1) the rain shadow effect on the leeward side of the Coast Mountains and (2) the Fraser River cutting through the Pavilion Ranges and contributing to extreme elevation differences in vegetation types from lowland bunchgrass to alpine. Combined, these two parks represent an elevation transition of 1500 meters (5000 feet) and contain portions of five different biogeoclimatic zones (Bunchgrass, Interior Douglas-fir, Montane Spruce, Engelmann Spruce/Sub-alpine Fir and Alpine Tundra). As a result, the parks contribute to regional and ecosystem biodiversity, particularly with their protection of grasslands and alpine parkland.



Plate 3: Alpine area near Mt. Bowman

Wildlife species, such as California bighorn sheep and mule deer, depend on the vegetation of the parks and seasonally migrate between the parks, from low elevation winter habitats to high elevation summer habitats. Park vegetation also contributes to the recreational and aesthetic experience of park users. Grazing tenures exist in both parks and management of animal units is aimed at ensuring forage is available for both planned wildlife and authorized livestock. Wildlife will have priority above these needs. The grazing strategy will be to achieve the Desired Plant Community (DPC)¹ within approved Range Use Plans. Travel corridors and ecological linkages will be maintained by ensuring that livestock do not cause significant unnatural cover breaks or isolate wildlife species from their habitats or potential habitats.

Dry grassland plant communities are among the rarest ecosystems found in the province, covering only 1.8% of the landbase. Although rare, grasslands play an important role in the province of British Columbia by supporting a unique variety of wildlife and plants, and by providing the best-quality grazing land for livestock. Edge Hills Parks plays a critical role in protecting grassland ecosystems and protects red and blue listed species such as spotted bats, longbilled curlews and California bighorn sheep. Found in the arid basin vegetation zone², these grasslands are a result of low elevation, intense rain shadow effect and hot, dry air masses from the south. The combined effect creates one of the hottest and driest climates in the province.

Low elevation grassland communities are characterized by the presence of prickly pear cactus (*Opuntia sp.*), big sagebrush (*Artemisia tridentata*) and many dryland grasses, such as bluebunch wheatgrass (*Agropyron spicatum*).

In natural ecosystems, fire, disease and insect infestations are fundamental disturbances that maintain ecosystem health and, as such, are generally allowed to continue within parks. Past interventions in natural disturbance patterns, particularly through wildfire suppression, has created some 'unnatural' conditions that make vegetation management more difficult. The resulting older seral stages and accompanying fuel loading has contributed to an increased risk of catastrophic wildfire and forest pest outbreaks. Fir and pine bark beetle infestations in recent years may be indicators that unnatural conditions may exist. Vegetation management planning that incorporates fire and forest health objectives may, as a result, be critical to maintaining healthy park ecosystems.

The management philosophy of BC Parks is to allow natural processes to occur to the greatest extent possible. This requires a good understanding of vegetation conditions and trends. Active management may be required to protect specific ecosystems that are important to wildlife species such as sheep and mule deer, and to maintain landscape biodiversity objectives.

Vegetation management within the parks must also be integrated with forest and grassland management on surrounding lands to ensure continued viability of vegetation ecosystems

¹ Desired Plant Community is a term defined under the Forest Practices Code to direct vegetation management objectives in Range Use Plans.

² *Plants of Southern Interior British Columbia*; J. Antos et al; Ministry of Forests and Lone Pine Publishing; Vancouver, British Columbia, 1996.

and wildlife populations. There has not been any significant vegetation inventory work undertaken for the park areas.

Objectives

- o To maintain natural plant communities for their inherent value and their contribution to summer and winter wildlife habitat.
- o To maintain natural vegetation for its contribution to landscape biodiversity and to visual aesthetics.
- o To protect rare, endangered and sensitive native plant communities and species, as they are identified, and to prevent the establishment of non-native species.
- o To manage for low impact, non-destructive scientific studies to improve the knowledge of park values and management activities.
- o To encourage public appreciation of the forest and vegetation values, particularly as they contribute to wildlife habitat.
- o To manage wildfire and pest infestations in a manner that maintains the integrity of natural conditions within the park, while considering the implications for adjacent native vegetation, wildlife, recreational and aesthetic values to the parks.
- o To manage for continued livestock grazing within the guidelines of the CCLUP, the *Range Act* and Forest Practices Code Range Management Guidebook in a manner that is sensitive to park values.



Plate 4: Monkshood in bloom

Strategies

- ◆ Prepare a vegetation management plan that considers objectives and strategies for: conserving natural vegetation patterns; identifying and protecting rare plants and plant associations; protecting sensitive or unique vegetation communities from adverse impacts of recreational uses; monitoring requirements to gauge the affects of park use on vegetation resources. This work should be supported by a biophysical inventory, ecosystem mapping, and rare vegetation inventory for the park areas, and will include:
 - a fire management plan for each park that indicates specific circumstances and locations for which wildfires may be allowed to burn or where controlled burning may be conducted. This plan will serve to meet landscape biodiversity objectives, protect adjacent commercial forests and adjacent buildings outside the park, resemble natural processes which maintain plant and animal diversity, and reduce the probabilities of a large wildfire. Included will be public evacuation measures, priority control areas and fire control methods (mechanized vs. non-mechanized).
 - a disease and insect management strategy to balance the ecological role of endemic levels with the threat of infestations that affect landscape biodiversity objectives or spread to adjacent lands.
- ◆ Undertake initial attack on all wildfire (by either the Ministry of Forests or BC Parks) to control wildfires until the situation is assessed. The fire may be allowed to run its natural course as long as it meets biodiversity objectives, and where visitors, adjacent commercial forests and other park values are not in danger. The intent is to allow natural fires to follow their natural course to the greatest extent possible. Avoid the construction of road access for fire suppression purposes to the greatest extent possible.
- ◆ Continue spot control of infestations by using low impact, site-specific methods, such as single-tree disposal. No new access will be created to address pest infestations. Where possible, allow infestations to run their natural course.
- ◆ Assess, monitor and control noxious weeds through mechanical means or proven biological means, particularly in areas where weed establishment could have harmful effects on wildlife and livestock forage.
- ◆ Develop interpretive information on the vegetation feature and values, as part of the communications strategy for the parks.
- ◆ Work cooperatively with the Ministry of Forests to manage cattle grazing in the parks in a manner that minimizes impacts from grazing on vegetation resources.

4.3 Fish and Wildlife

Marble Range and Edge Hills Parks contain important habitat for a variety of wildlife species. Large mammals include California bighorn sheep³, mule deer, moose, black bear (*Ursus americanus*) and cougar (*Felix concolor*).

The expansive alpine areas and rocky slopes of the Marble Range offer prime habitat for California bighorn sheep from late spring to early fall. Black bear, moose, mule deer and cougar can be found at lower elevations where there is continuous tree cover, forage vegetation and water. Several species of grouse can be found here such as the sharp-tailed grouse (*Tympanuchus phasianellus*), as can a variety of raptors and songbirds.

Elk (*Cervus elaphus*) have also been sighted in the area by BC Environment staff. While there is potential habitat for elk, there is no plan to re-introduce this species.

Edge Hills Park is of critical importance for both summer and winter range for both California bighorn sheep and mule deer, and as a lambing ground for California bighorn sheep. This area also attracts songbird species that are not found in Marble Range. The flammulated owl, a blue listed species on the provincial list and considered vulnerable by the Committee on the Status of Endangered Wildlife in Canada, is thought to utilize the old growth Douglas-fir forest along the ridges above the Fraser River. Several other rare species may also be present, including bats, toads and snakes.

Wildlife species often use various karst features for habitat. In Marble Range, the limestone cave formations are used intermittently by large carnivores for shelter or resting. Birds and small mammals nest in caves and other rock cavities. Mule deer and California bighorn sheep often bed down in the vicinity of cave openings during summer when the air from caves is cooler, and during winter when the air from caves is generally warmer than surrounding temperatures. Caves and their stable environments can be critically important for bat species that depend on them for roosting and hibernation.

A key feature of these parks is the continuous travel corridor for wildlife moving between seasonal ranges that these areas provide. Because of this annual migrating pattern, habitat management strategies for the park will need to be closely coordinated with those of the surrounding area.

These parks and surrounding areas experience significant use by hunters. Primary game species include California bighorn sheep, mule deer, moose and grouse. With few access roads into the parks, hunting access is predominately by trail.

³ California bighorn sheep are a blue listed species that is considered vulnerable in British Columbia.

In an effort to reduce the focus on key habitats, and thereby lessen the potential for visitor-wildlife conflicts, wildlife habitat and use maps have not been published as part of this management plan.

Fisheries values in these parks are low, with streams at lower elevations supporting small native trout populations. Water courses are small with steep gradients, and flows are flashy. The area is relatively dry and water is generally at a premium in the summer months. There have been no formal surveys of fishery values. Some of the small lakes in the vicinity of the parks, including Kelly Lake, have been stocked with rainbow trout (*Oncorhynchus mykiss*).

Pear Lake, just outside Edge Hills Park is a popular family fishing spot. If Pear Lake were to become part of Edge Hills Park at a future date, this would provide the opportunity for a park-managed, family (children's) recreational fishery along Kelly Creek and at Pear Lake.

Objectives

- To identify and conserve the natural diversity of wildlife species and populations over the landscape.
- To protect rare, endangered, sensitive or vulnerable species, especially California bighorn sheep and flammulated owl.
- To protect critical habitats and enhance declining habitats in conjunction with other park management and recreation use objectives, particularly California bighorn sheep summer and winter range and travel corridors in Edge Hills Park.
- To increase knowledge and understanding of wildlife resources and habitat in the park, and to encourage scientific research that has direct management benefits in the parks.
- To minimize the impact of traditional, recreation and commercial uses on fish and wildlife.
- To protect and maintain the natural qualities of water resources and their contribution to fish habitat within the parks.
- To maintain natural fish habitat and conserve all natural fish populations.
- To maintain a low intensity recreational fishery at Pear Lake (if added to Edge Hills Park).

Strategies

- ◆ Use terrestrial ecosystem mapping and other resources to identify wildlife habitat suitability and to support the management of wildlife within, and adjacent to, both parks.
- ◆ Develop a long-term management plan for wildlife with BC Environment. Key elements in this strategy include: ongoing wildlife inventories; inventory of habitat requirements of species with particular reference to critical habitats; protection of rare and endangered species; role of fire, insect and disease in terms of creating a range of

habitats including snags for various bird and animal species; role of adjacent lands; opportunities for research programs; and develop strategies if wildlife populations are endangered.

- ◆ Consider the enhancement of habitats or populations only to support biodiversity conservation objectives and the maintenance of species at natural levels.
- ◆ Take any necessary actions to minimize the damage to riparian areas and natural wetland environments from recreational use, wildlife use and cattle grazing. Monitor cattle grazing in wetland habitats using guidelines defined in the Range Management Guidebook and *Range Act*.
- ◆ Identify funding sources and/or programs by which information on wildlife habitat and population characteristics can be collected and evaluated.
- ◆ Assess conditions and monitor levels of recreation use to limit the impact on fish and wildlife. Undertake actions to address and avoid conflicts between people and wildlife, such as education, rerouting of trails and closures. Restrict recreation use in California bighorn sheep lambing areas during lambing season.
- ◆ Work with Fisheries Branch to maintain the recreational fishery at Pear Lake, (if added to Edge Hills Park) including a stocking program.
- ◆ Undertake radio collaring of California bighorn sheep to determine patterns of use and movement corridors.
- ◆ Aboriginal hunting, fishing and trapping rights are not affected by this management plan. BC Parks will work with BC Environment and First Nations with aboriginal rights in these parks to ensure that sustenance hunting needs are met, and that wildlife populations are viable.
- ◆ Authorize, by park use permit, the continuation of pre-existing trapline operations. Allow the use of firearms and snowmobile access for trapline management by the registered trapline holder and authorize this in park use permits.
- ◆ Allow non-motorized hunting activities to continue.
- ◆ Monitor and regulate hunting, fishing and trapping in conjunction with BC Environment to ensure healthy fish and wildlife populations are maintained. Meet annually, or periodically as required, with local hunting groups to gain timely local input to habitat management and hunting regulations that affect the animal populations that use these parks. Once management issues have been identified, corrective actions should be taken in as short a time period as possible.

4.4 Water

Water is a scarce resource in both Marble Range and Edge Hills Parks, with a number of streams flowing seasonally or disappearing underground for parts of the year. The management of certain activities within these parks may depend, in part, on the availability

of water supplies (for example, livestock grazing, commercial horse use or limitations based on fire hazards).

The Village of Clinton draws its water from the Clinton Creek drainage on the southeastern edge of Marble Range Park. This area has a community watershed designation. Known locally as “the big swamp”, the drainage contains areas where the peat layer is perhaps as thick as 20 feet. In the generally dry and rocky Marble Range, this large wetland is a distinctive feature. Only the headwaters of Clinton Creek are within the boundary of Marble Range Park.

Pure drinking water is one of this area’s main values for local residents. The combination of limestone and swamp provide large quantities of pure, high quality water. For this reason, the residents have been sensitive to human activities occurring in the watershed. A number of years ago, when plans were presented to log in the area, residents formed a watershed committee and, through discussion and compromise, developed a watershed logging and management plan acceptable to all parties. Logging in the watershed has been very restricted and vehicle access has been strictly controlled through gated and locked access.

The water flowing from several drainages along Lime Ridge, on the west side of Marble Range Park, forms Porcupine Creek. This creek is the main source of water on the west side of the Marble Range. Its taste and purity have resulted in people collecting their drinking water at the point where Porcupine Creek meets the Jesmond road. Homes along the Jesmond Road depend on this water.

A number of water licenses exist within Marble Range Park and these will continue under park use permit.

While the protection of water sources is an important component of the conservation and recreation roles of these parks, the small, steep gradient streams support few fish, except at lower elevations. If Pear Lake were to become part of Edge Hills Park, this would provide a good local recreational fishery along Kelly Creek and at Pear Lake.

Objectives

- To protect and maintain the natural qualities of water resources and their contribution to ecological processes within the parks.
- To maintain the quality and quantity of water from the parks for use as domestic water supplies, particularly the supply for the community of Clinton.
- To recognize pre-existing water rights and uses.

Strategies

- ◆ Except as approved in range use plans, prohibit further water impoundments, diversions or domestic use projects within the parks.

- ◆ Ensure that trail maintenance minimizes erosion of surface materials into watercourses.
- ◆ As part of the communications strategy for these parks, provide information to users on the acceptable procedures for proper disposal of human wastes — monitor use for impacts of waste disposal.
- ◆ Issue park use permits for pre-existing water licenses and structures.
- ◆ Modifications to pre-existing water use facilities related to cattle grazing may be permitted, subject to range use plan referral, park management policies and impact assessments.

4.5 Land and Resource Tenures

A number of activities have taken place in the area of these parks in the past that require the issuance of tenure by the Crown, including trapping, mining exploration and development, livestock grazing, timber harvesting, water use and recreational guiding.

With the formal designation of the parks under the *Park Act, 1995*, timber harvesting options and mineral exploration and development activities have been halted. These uses are incompatible with provincial park policies and legislation, and will no longer be permitted. Grazing, trapping, recreational guiding and hunting are compatible with the objectives of these parks, and their continuation is provided for in the CCLUP.

Some previously logged areas on the eastern periphery of Marble Range Park are just inside the park boundary. BC Parks will work with the Ministry of Forests to determine the most suitable silvicultural prescriptions for returning these blocks to a condition which is consistent with the vegetation management strategy and access management requirements for the park.

Mineral claims have been excluded within park boundaries. Continental Lime holds substantial claims on the periphery of the parks that cover an area of high interest for exploration and potential quarry development. The CCLUP provides for some of these claims to revert to the Crown for park purposes if, and when, Continental Lime relinquishes their interest in them. These claim areas are shown on Map 4.

Access to claims adjacent to Edge Hills Park along the Fraser River is by way of a road down Cavanagh Creek through Edge Hills Park. The issue of long term access through the park to these mineral claims will have to be resolved.

Cattle grazing has occurred in these parks and on surrounding range lands for decades, with the Ministry of Forests having the primary responsibility for ensuring good range management practices. Livestock grazing will continue in Marble Range and Edge Hills Parks, and will continue to be managed by the Ministry of Forests, subject to the *Range Act* and regulations, Forest Practices Code and inter-agency protocol.

Consistent with the CCLUP and subject to managed range conditions, pre-existing grazing tenures will be authorized under the *Range Act*, with no loss of Animal Unit Months (AUMs). However, AUMs will not be increased. Map 5 shows existing range tenures.

Low elevation grassland communities along the Fraser River are used by both California bighorn sheep and cattle, and with arid conditions, are particularly sensitive to over-grazing. Grazing strategies within approved Range Use Plans will maintain and enhance forage values for California bighorn sheep, other wildlife and livestock. Livestock grazing is to be managed to achieve the Desired Plant Community outlined in the Range Use Plan. The Forest Practices Code requires that Range Use Plans describe actions for achieving objectives for identified wildlife.

BC Parks will work with BC Environment staff and range staff from Ministry of Forests to assess, monitor and address impacts of grazing by both wildlife and cattle on sensitive grasslands. Action will be taken to correct localized damage along specific water courses.

Uncontrolled grazing by horses may be affecting the quality of low elevation grasslands in localized areas. BC Parks will identify the owners of these horses and will take any steps necessary to protect range quality from degradation by free-ranging horses.

Trapping has long been a traditional activity in the parks and its continuation is provided for in the CCLUP. Both parks are covered by five trapline tenures. This pre-existing trapping activity will be authorized by park use permit so that it may continue. The permit procedure will specify and authorize any required use of firearms or motorized access for trapline management by the registered trapline holder. If fur-bearer populations are under stress, BC Parks will work with BC Environment and the trapline holder to manage activities so that animal populations are not threatened. Trapline tenures may be sold.

Recreational guiding is also an established activity in these areas and includes trail riding, hiking, backpacking, photography expeditions, hunting and nature appreciation. Pre-existing operations will be authorized within the parks by way of park use permits, with specifications for operating procedures and use levels that are consistent with other park management objectives. Commercial recreation operations should not displace public access to park resources (refer to Section 5.2.8 for greater detail). Map 6 shows guiding areas, traplines and points of water diversion.

Guided hunting will continue. BC Parks will work with BC Environment and guides to assess hunting pressure and regulate quotas as necessary to protect the resource.

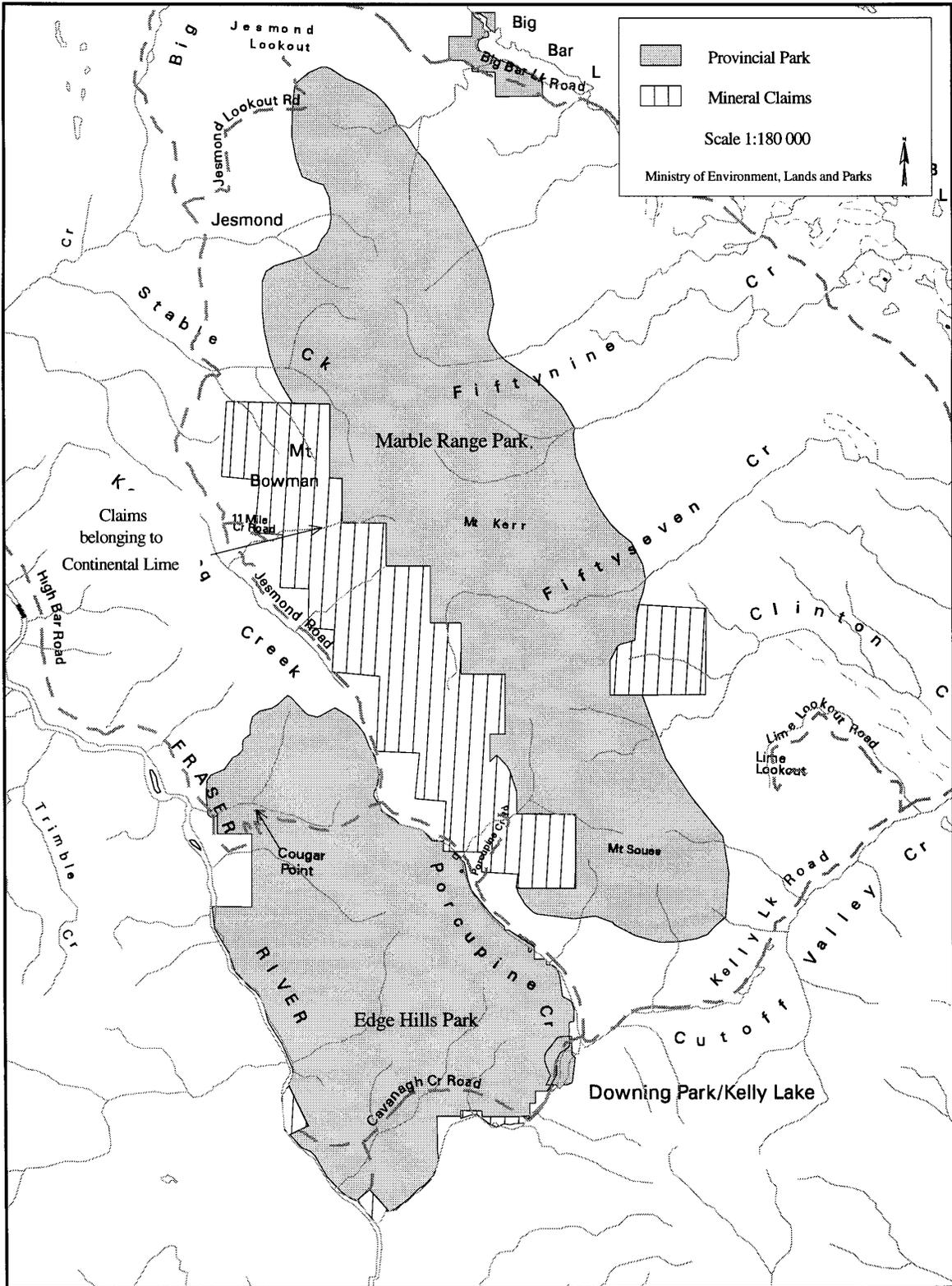
Objectives

- o To manage tenures to meet the conservation roles of the parks and the obligations to established uses.
- o To minimize environmental and visual impacts of tenured activities.

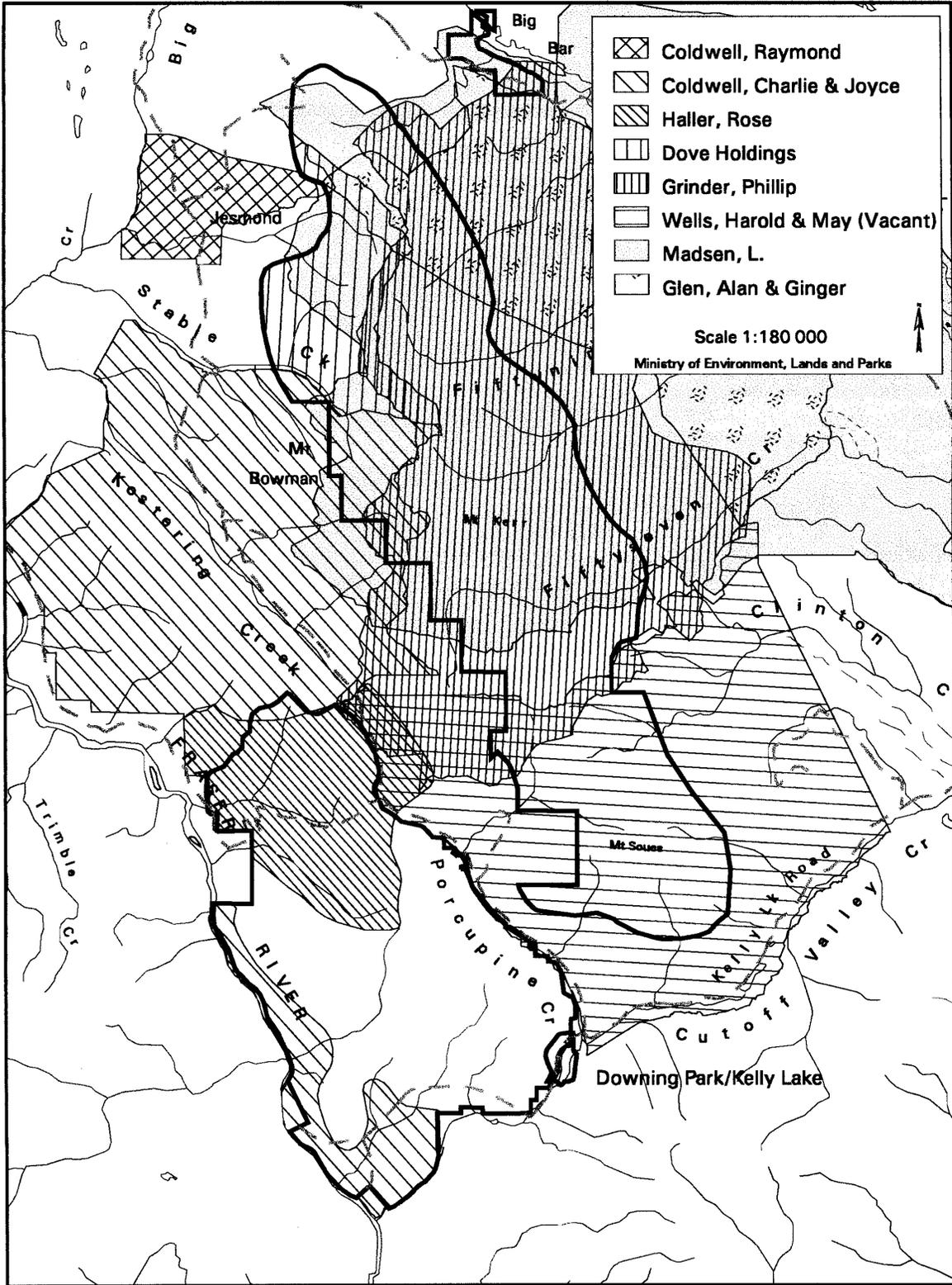
Strategies

- ◆ Work within sub-regional land use planning processes for surrounding lands, and with other agencies to protect values in the parks and adjacent to park boundaries. This includes minimizing impacts on scenic values, water and air quality and noise through activities such as logging, mine infrastructure and gravel pits. Focus on areas with important scenic and recreation values.
- ◆ Honor existing backcountry recreation-related tenures and permits as park use permits.
- ◆ Cooperate with the Ministry of Forests under its Range Management program in honoring and managing existing grazing tenures. Ensure that range management plans are prepared, and that livestock grazing is assessed, monitored and managed so that grazing and grassland communities are sustainable and damage is minimized (such as damage to riparian areas from cattle use). Grazing activity will not be expanded from the October 1994 allotted Animal Unit Months.
- ◆ Authorize current trapping and guide outfitting operations by issuing park use permits for activities and associated structures and camps.
- ◆ Require permit holders to remove unnatural objects and structures which have no historical significance, are severely dilapidated or are no longer required. The Permittee must rehabilitate the site to a natural state when the permit has been terminated.

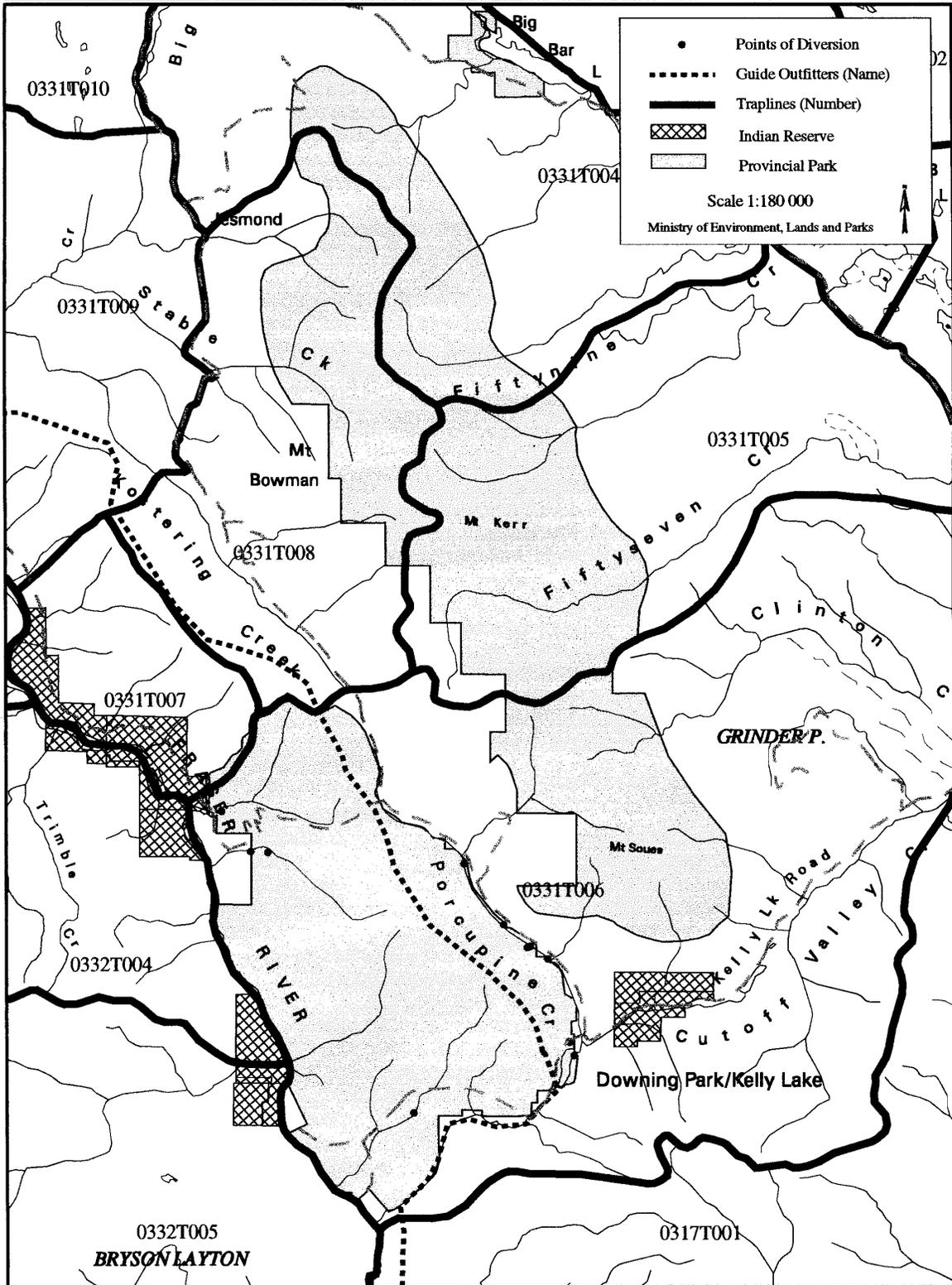
Map 4. Mineral Claims Bordering Marble and Edge Hills Parks



Map 5. Range Tenures Holders



Map 6. Guiding, Traplines and Points of Diversion



4.6 Cultural Values

Marble Range and Edge Hills Parks are part of the traditional territory of the Shuswap aboriginal people. The area provided home sites and was used for hunting, fishing, trapping and gathering. Of importance to gatherers were huckleberries, blueberries, soopallalie and saskatoon berries, as well as a number of medicinal plants. Strawberry Lake held special importance as a summer home site because of its proximity to berry picking sites.

The limestone caves found in the karst formations of the Marble Range served as important training grounds for aboriginal doctors and seers. These caves are reported to also have been used as a training location for lahal players (a game of dexterity and gambling played with sticks). Caves, as a result, hold special cultural and spiritual significance.

A large number of pit houses exist in the vicinity of Clinton Creek, 57 and 59 Mile Creeks, Kelly Lake, Pear Lake, Kelly Creek, Cavanagh Creek and along the valley toward the Fraser River. These pit houses point to the possibility that this area may have once been one of the most populous areas for the Shuswap aboriginal people. The largest such grouping of pit houses may have as many as 200 sites. First Nations information says that many pit houses were abandoned after the smallpox epidemic of 1862 killed most of the residents. It is thought that people who had succumbed to the deadly disease were left in the pit houses, and that the roofs were allowed to collapse and bury the bodies. The protection of the integrity of these pit houses is a serious concern for First Nations and for BC Parks. For this reason, site specific information about these sites is not available as part of this management plan.

Four Shuswap First Nations continue to use the area in and around Marble Range and Edge Hills Parks: the Whispering Pines First Nation, the Canoe Creek First Nation, the High Bar First Nation and Pavilion First Nation. The High Bar and Whispering Pines First Nations have traditional interests over the general area of both Marble Range and Edge Hills Parks. The traditional territory of the Canoe Creek First Nation takes in only the northern portion of Marble Range Park, while traditional territory of the Pavilion Band has been the southern portions of the two parks. Traditional sharing of the land among these First Nations continues today.

While Canoe Creek, High Bar and Pavilion First Nations are located in the general vicinity of the parks, the Whispering Pines First Nation reserve land is now located on the North Thompson River about 30 kilometers north of the city of Kamloops. This Band was moved there in 1972 by the BC Hydro Corporation from their traditional home at Kelly Lake. This move was precipitated by concerns about the proximity of hydro-electric transmission lines. Their traditional territory, however, remains intact and includes Kelly Lake and the area of the two parks. The Band continues to use the traditional fishing station on the Fraser River at Cavanagh Creek and upgrades the road for access every few years.

The area in and around Marble Range and Edge Hills Parks also has historical significance for its mining exploration and development activities. The most significant mine in the area, the Grange Mine, was active into the 1940s. Located at Kelly Creek just outside of Edge Hills Park, it employed white, aboriginal and Chinese workers.

With the development of the Grange Mine, the fishing stations traditionally used by aboriginal people became inaccessible. The area was developed with cabins and other structures to house mine workers and their families. Some evidence of these structures remain near Kelly Creek and below Pear Lake.

Chinese miners constructed a flume around the mountain from the mouth of Kelly Creek to deliver water to their own mine sites. Evidence of this flume can still be found.

Objectives

- To work with local residents and aboriginal people of the area to increase historical and cultural knowledge.
- To protect important historical, cultural and archaeological features and sites.

Strategies

- ◆ With guidance from local First Nations, undertake an archaeological assessment of the parks to determine the nature and extent of features and values.
- ◆ Work with local First Nations and Heritage Conservation Branch to protect important sites.
- ◆ Avoid publication of exact locations of historic or cultural values of significance, to reduce the likelihood of damage or degradation from human activities.
- ◆ With guidance from local First Nations, develop management strategies for identified heritage and archaeological sites, particularly pit houses and caves.
- ◆ With guidance from local First Nations, undertake archaeological impact assessment prior to any development, particularly near pit houses.
- ◆ Investigate opportunities for First Nations to provide information on their culture to park visitors.
- ◆ With guidance from local First Nations concerning their wishes with respect to visitation, site damage and the preservation of artifacts, provide education and information to park visitors on the sensitivities and significance of cultural landscapes, pit houses and caves.